

CASE STUDY

N-12[®] Provides Detention for Dow Gardens Expansion

Midland, MI

OWNER

Herbert H. and Grace A. Dow Foundation,
Midland, MI

ENGINEER

Rowe Professional Services, Grand Rapids, MI

CONTRACTOR

Fisher Contracting Company, Midland, MI

INSTALLATION DATE

Summer 2025

PRODUCTS

960' (293 m) of 36" (900 mm) N-12 Dual Wall WT Pipe
7,960' (2,426 m) of 48" (1200 mm) N-12 Dual Wall WT Pipe
79 Nyloplast[®] Drain Basins

CHALLENGE

The Dow Gardens in Midland underwent a major renovation that included an expansion of the grounds and parking lots. In order to complete the expansion, a new system was required to manage stormwater. The parking lot expansions occurred in three different areas requiring three separate stormwater management systems to be added.

The site's high water table made infiltration into the soil impossible, so a watertight system was required. The new systems were designed to temporarily detain stormwater and then release it in a controlled manner—either into nearby natural waterways or into the city's stormwater network.

SOLUTION

To ensure full stormwater detention, Rowe Professional Services, the project's engineer, selected N-12 High-Density Polyethylene (HDPE) pipe. Both the pipe and the fabricated fittings feature an



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inline, watertight bell-and-spigot joint, making them suitable for the site's non-infiltrating conditions.

System A utilized 960' (293 m) of 36" (900 mm) N-12 pipe. Systems B and C used 48" (1,200 mm) N-12 with 7,960' (2,426 m) of pipe buried. The three systems combined can hold over 100,000 cubic feet (2,831 cubic meters) of stormwater. Numerous watertight fabricated tees and 90° bends were needed to complete the detention systems.

To capture stormwater throughout the grounds, 75 Nyloplast basins, ranging in diameter from 12"-18" (300-450 mm) were installed. As part of the planning process, WTA Architects advocated for the basins along sidewalks and in grassy, low-lying areas. All of the captured stormwater was conveyed to the detention system.

Because Dow Gardens had a small staging area, communication between the contractor, Fisher Contracting Company, and ADS was key. Pipe, fittings and drain basins needed to be delivered on time, so that they could be installed quickly prior to the next delivery. ADS products were selected for the project due to the company's reliable customer service, watertight system components and overall cost-effectiveness.

PRODUCT DESCRIPTIONS

N-12 is manufactured for gravity-flow storm drainage applications. N-12, which is available in diameters from 4"-60" (100-1500 mm), offers exceptional hydraulics and strength. N-12 provides superior corrosion and abrasion resistance in a lightweight, corrugated design. A polyethylene bell minimizes joint distortion and eliminates chipping and cracking that is common to concrete bells. Available in 20' (6 m) lengths, N-12 provides lower installation costs and faster installation than traditional materials.

Nyloplast Engineered Surface Drainage products provide dependable, project-specific solution for stormwater management. The heavy-duty PVC structures and ductile iron grates deliver the strength and durability needed to meet site demands. With a range of structures from 8"-36" (200-900 mm), Nyloplast is tailored to project requirements. Seamless compatibility with plastic underground storm drain systems allow for smooth transitions between pipe sizes and materials, as well as adjustments in elevation and direction, supporting efficient installation and long-term performance.



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